

Title (en)
Pulse detonation system for a gas turbine engine

Title (de)
Pulsiertes Detonationssystem für Gasturbinen

Title (fr)
Système de détonation pulsé pour turbine à gaz

Publication
EP 1455065 B1 20060531 (EN)

Application
EP 04251220 A 20040303

Priority
US 38302703 A 20030306

Abstract (en)
[origin: EP1455065A2] A pulse detonation system for a gas turbine engine having a longitudinal centerline axis (12) extending therethrough, where the pulse detonation system includes an air inlet duct (48) in flow communication with a source of compressed air, the air inlet duct (48) including at least one port (50) formed therein for permitting compressed air to flow therethrough, a fuel injector (52) mounted to the air inlet duct (48) in circumferentially spaced relation to each port (50), and a device mounted to the air inlet duct (48) in circumferentially spaced relation to each fuel injector (52) for initiating a detonation wave. A rotatable ring member (56) is also positioned in coaxial relation around a portion of the air inlet duct (48), with the ring member (56) including at least one stage of detonation (58/60) disposed therein. Accordingly, a detonation wave is produced in each detonation stage (58,60) and combustion gases following each detonation wave create a torque which causes the ring member (56) to rotate. Each detonation stage (58,60) in the ring member (56) further includes a plurality of circumferentially spaced detonation ducts (66) extending tangentially from an inner surface (74) of the ring member (56), wherein the detonation ducts (66) are aligned with each port (50), the fuel injector (52) and the initiation device (54) in a predetermined timing and sequence so that detonation waves are produced therein. <IMAGE>

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Cited by
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